



US 20170086187A1

(19) **United States**

(12) **Patent Application Publication**  
**Lunttila et al.**

(10) **Pub. No.: US 2017/0086187 A1**

(43) **Pub. Date: Mar. 23, 2017**

(54) **ALLOCATION OF COMMUNICATION RESOURCES**

(71) Applicant: **Nokia Solutions and Networks Oy**, Espoo (FI)

(72) Inventors: **Timo Erkki Lunttila**, Espoo (FI); **Esa Tapani Tirola**, Kempele (FI); **Frank Frederiksen**, Klarup (DK)

(73) Assignee: **Nokia Solutions and Networks Oy**

(21) Appl. No.: **15/359,665**

(22) Filed: **Nov. 23, 2016**

**Related U.S. Application Data**

(63) Continuation of application No. 13/781,986, filed on Mar. 1, 2013, now Pat. No. 9,532,341.

(30) **Foreign Application Priority Data**

Mar. 2, 2012 (EP) ..... PCT/EP2012/053621

**Publication Classification**

(51) **Int. Cl.**  
**H04W 72/04** (2006.01)  
**H04L 1/18** (2006.01)

(52) **U.S. Cl.**  
CPC ..... **H04W 72/0413** (2013.01); **H04L 1/1861** (2013.01); **H04L 1/1864** (2013.01)

(57) **ABSTRACT**

The disclosure relates to the allocation of resources for wireless communications. An index for an uplink control resource is determined in accordance with a predefined rule. The determining takes into account an index associated with a physical downlink resource and the amount of downlink resources to be mapped on the uplink control resource.

